

US 89 Landslide Event and Repair Milestones

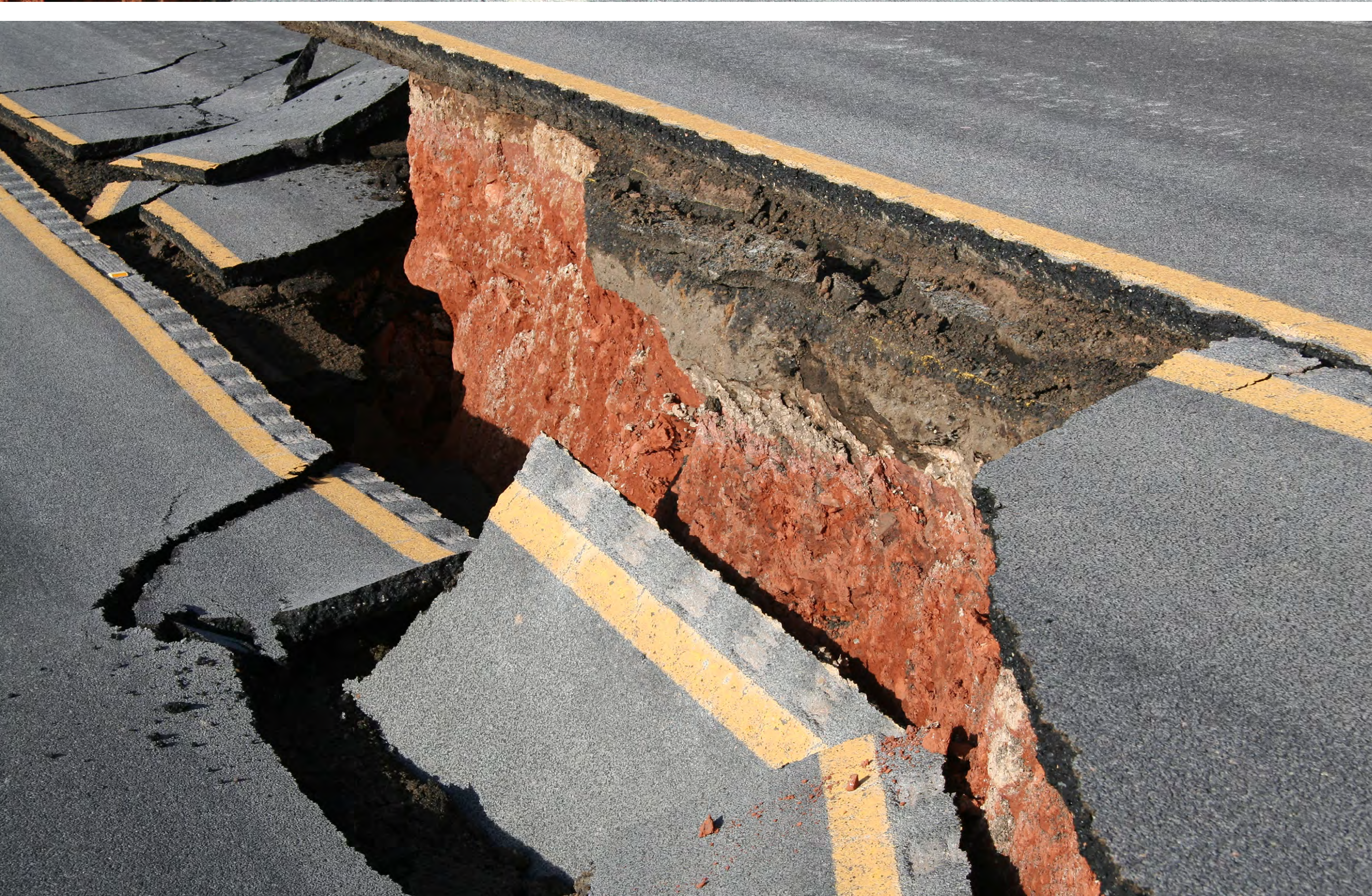
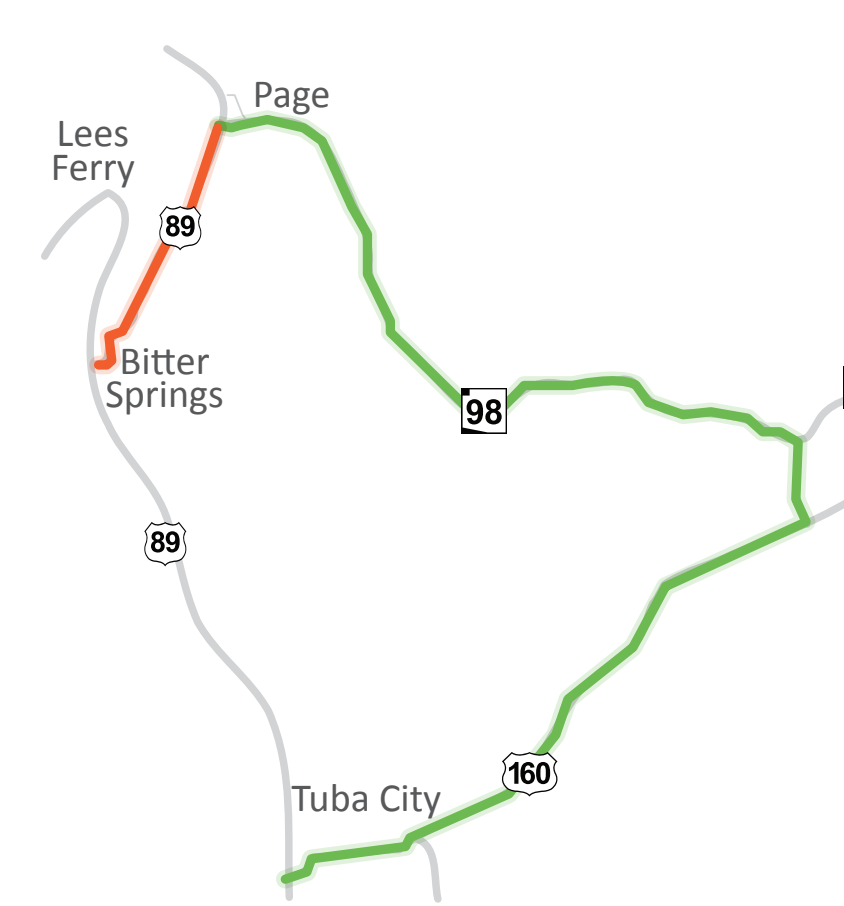
February 20

2013

Landslide Occurs

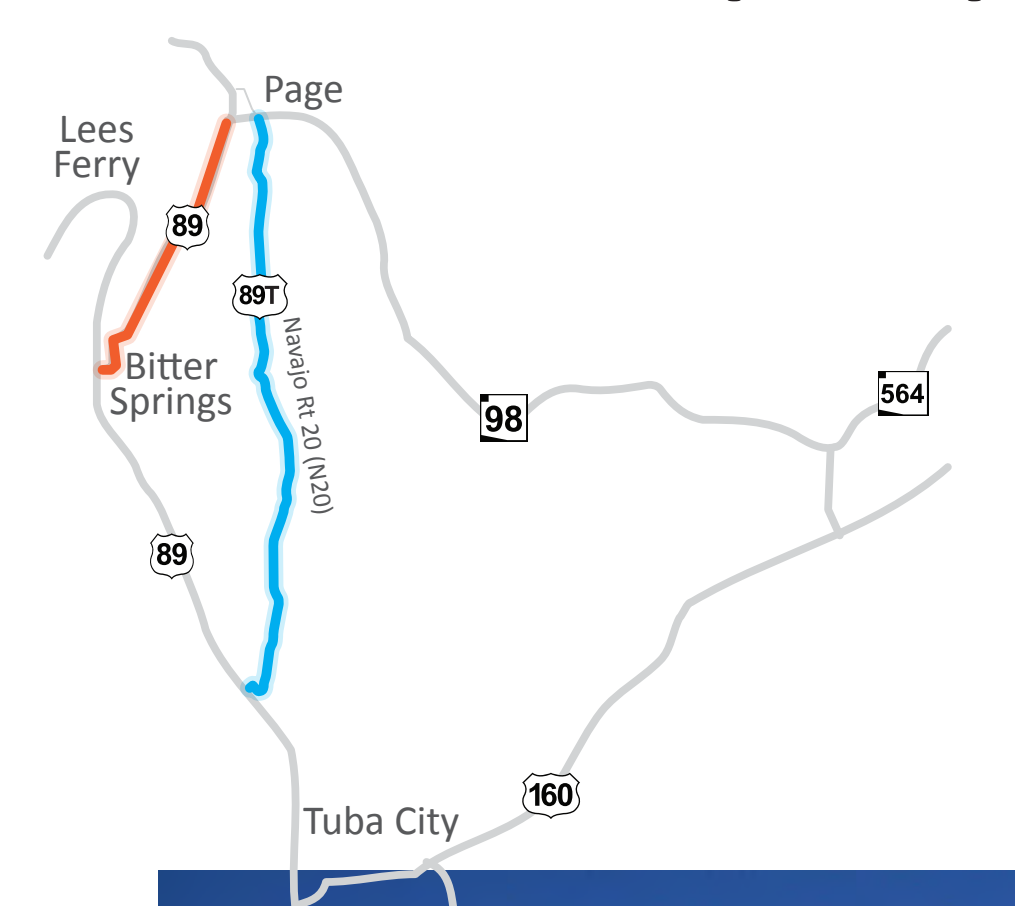
An early morning landslide rips 150 feet of roadway, forcing immediate closure of a 23-mile stretch of US 89 between the US 89 junction near Bitter Springs to the State Route 98 junction near Page

Initial DETOUR Established



March 21

ADOT Plans Shorter DETOUR US 89T (N20)



June 9

Ground-breaking Begins US 89T (N20) Construction

August 29

Shorter Temporary Detour Opened US 89T (N20)



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March

2014

July

Contractor Selected to Begin Repairs



Repairs begin on US 89 Landslide and New Roadway

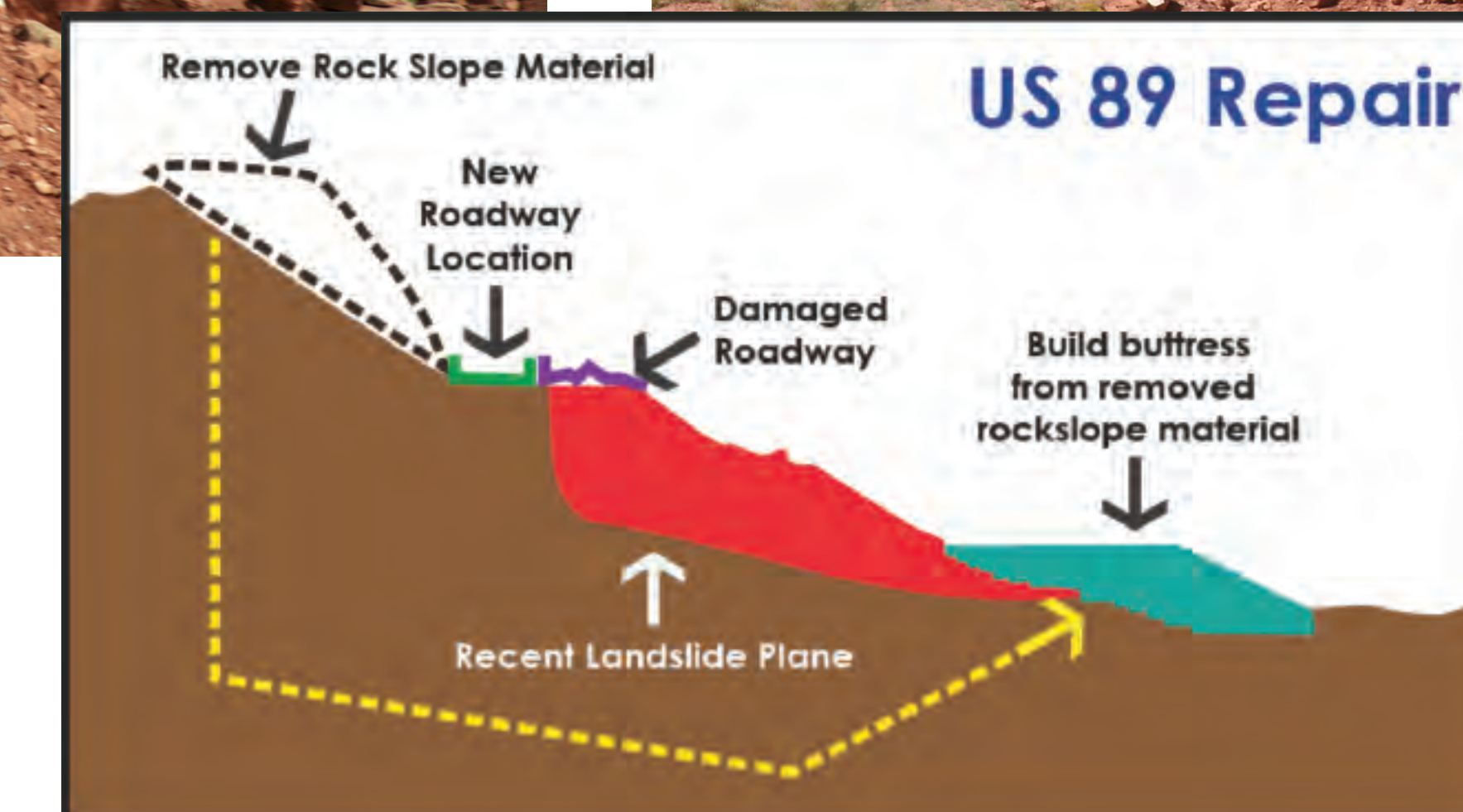


The repair included moving the roadway approximately 60 feet away from the landslide area toward Echo Cliffs and using rock material removed for the roadway realignment to construct a downslope buttress to stabilize the area



Moving a mountain...

- Around One Million Cubic Yards of material were blasted and moved



- Over 46,000 truck loads were required to complete excavation

ADOT secured more than \$60 million in federal emergency relief funds to investigate the cause of the landslide, pave US 89T and repair US 89



Before Repairs Began

Emergency Event

Landslide triggers need for a Incident Management Team to:

- Restore mobility to the area both short- and long-term
- Provide for the safety of site workers and visitors and security of the site
- Keep the public, stakeholders and the media informed of recovery activities

Investigating the Cause

Extensive geotechnical work was conducted to determine the cause and assist in identifying solutions for repairs

Rebuilding

Before federal funds could be secured and repair work could begin, a full environmental and utility clearance was required

Agreements between

the Federal Highway Administration, ADOT, Navajo Nation, and the Bureau of Indian Affairs were reached to secure federal aid to rebuild the damaged roadway, including new right-of-way easements to facilitate construction, operations and maintenance of the repaired roadway and temporary detour